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Consultancy designer involvement in new product development: Mapping a novel design leadership process

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ABSTRACT

The role of design and designers in new product development (NPD) has always been problematic and complex in its approach and in the extent of its involvement (Leenders et al., 2007; Murray and O'Driscoll, 1996; Veryzer and Borja de Mozota, 2005). As the industrial design profession seeks to confront the challenges of a recessionary environment, both the designer led 'intuitive' approach to NPD, and the marketer led 'systematic' approach become outmoded (Cross, 2001; Martin, 2007). There is shortcoming, even ambivalence, in the NPD and design management literature as to how design is involved in NPD (Cooper et al., 2003; Olson et al., 1998). Perks et al. (2005) suggest the designer's involvement is moving from merely functional expertise to broader leadership activities. The research reported in this paper seeks to contextualise the fledgling position of design as NPD leader, and to understand the nature and level of design and designer involvement in NPD.

Using a case study approach, the researchers sought to investigate these issues in Ireland's largest industrial design consultancy. The firm, established 25 years ago, employs 30 design professionals. It handles projects for a range of well-known, international clients in mature, consumer product categories, for example, Palm, Terraillon and Logitech. The lead researcher spent six weeks embedded in the firm in summer 2009, carrying out quasi-ethnographic observation and semi-structured interviews with designers and management. Further interviews were conducted at the European studio of an international consultancy to enable a broader comparison.

The firm was found to be in a period of flux, moving from a situation where the client called the shots, often based on uni-dimensional market research, towards one where the design studio sought to win greater involvement in NPD. A studio in such a predicament has yet to be empirically examined in the literature. Reorientation from a passive, and often late, role in NPD towards one of fuller

leadership and greater input is a central feature of this research. A significant amount of conventional design work was gradually gravitating towards business analysis and marketing conceptualisation. Designers engaged in a high level of analysis on product, user and brand, and offered direction to clients through a range of activities. In many regards, they embraced the language and craft of the marketer. The company's new mantra was to "manifest our clients' brand through great product design". This shift marks the division between the designer's role as a mere service provider versus design authority.

The extent to which leadership could be successfully offered depended, in a large part, on the relationship between designer and client. This relationship determined the extent and timing of involvement of designers in NPD. Different types and intensities of relationships were observed. For example, constant dyadic communication facilitated intense relationships where typical design briefs were extremely informal. However, an asymmetry in consultancy-client relationship, provoking vulnerability and internal tension, was uncovered. This revealed the transitional ground that the studio currently inhabits.

This study charts in detail a move by a well-established design consultancy to take greater 'ownership' of NPD. In shaping this process, the constellation of the designer-client relationship is critical. A model of designer-client involvement in NPD, hinging around project classification and designer input, is developed. This model is predicated on three important insights from the research: (i) a broadened designer remit; (ii) extensive and early NPD involvement on the part of designers; and (iii) increased ownership of the NPD process by the consultancy designers. As the design profession transitions, as designers increasingly sell a greater range of expertise and provide greater value to clients, it is suggested that the model provides relevant insight to both design consultancies and client firms in the NPD process.

INTRODUCTION

Product design has its roots in industry (e.g. Heskett, 2001; Sparke, 1983), yet the role of design and designers in new product development (NPD) has always been problematic and complex in its approach, and in the extent of its involvement (Jevnaker, 1998; Leenders et al., 2007; Murray and O'Driscoll, 1996; Veryzer and Borja de Mozota, 2005). Recent evidence from the literature suggests that the role of designers in NPD is becoming more strategic and that design is taking a leadership role (Perks et al., 2005). That reorientation is the focus of attention of this article.

DESIGN INVOLVEMENT IN NPD

The integration of industrial design in business practice has been empirically examined extensively, especially over the last decade, in a range of domains: for example, (1) its impact on company performance (e.g. Gemser and Leenders, 2001; Hertenstein et al., 2001, Platt et al., 2005; Olson et al., 1998), (2) international performance (e.g. Ughanwa and Baker, 1989; Walsh et al., 1992), (3) management of (e.g. Borja de Mozota, 2003; Cooper et al., 2003; Leenders et al., 2007), (4) as strategy (Liedtka, 2000), and (5) its link to other functions (e.g. Bruce and Daly, 2007; Jevnaker, 2005; Martin, 2007). Of particular note is Jevnaker's (2005) study of 'outlying' design-business relationships in innovative companies whose success is concluded to owe much to their championing of design. These studies drive to understand the contribution of design to business: all point towards design as a 'strategic tool' (Kotler and Rath, 1984) of increasing value.

Despite these credentials, the disconnect between the design and business pairing runs deep (Martin, 2009), partly down to design's interest in the future and the unknown, versus the preference for predictability and logic in the commercial context. However, it has been suggested that the couple are more convergent than divergent (Borja de Mozota, 1998) – both are concerned by people, and must creatively solve 'wicked' problems (Rittle and Webber, 1973). Their methodological approaches, however, are fundamentally different. Designers generally work intuitively, while managers seek systematic logic and minimisation of costly NPD risk. A recent trend has championed the harnessing of design skills ('design thinking') for business (Boland and Collopy, 2004; Brown, 2008; Martin, 2009).

While the product development and design management literature remain divided between 'systematic' and 'intuitive' approaches to design, neither the systematic nor intuitive paradigms alone are responsive to the requirements of designer and manager alike. Martin (2007; 2009) suggests the optimum solution is a 50/50 balance between managerial 'reliability' (consistent, replicable outcomes founded on methodological rigour with the goal of risk minimisation), and designer 'validity'

(meeting the objectives of the future, using judgment and bias in order to produce relevant products).

As design becomes more prevalent, organisations are increasingly turning to it to add value to the basic product offering. It is not novel that design can add value at levels greater than solely product aesthetics (Cooper and Press, 1995; Murray and O'Driscoll, 1996), yet few organisations are adopting a product strategy which integrates design from the outset of NPD.

Since paths of NPD are underpinned by firm focus and strategy, this focus determines who has the definitive input in NPD: the designer or the marketer. In 'evolutionary' firms (Borja de Mozota, 1998) a traditional genre of business leaders are dominant, and consider design an 'add-on' to existing practices, even despite the modes of integrative NPD fashionable during the 1990s (e.g. Hart and Baker, 1994). In the quest for reliability, design expenditure must be justified to eliminate risk. In contrast, in 'revolutionary' firms, design is wholly recognised and integrated. Design processes are less quantifiably rigorous, and more dependent on designer intuition. A review of the literature suggests two polar modes of NPD: marketing/business-led NPD, and design led NPD.

Marketing led NPD vs design led NPD

Both NPD and modern day industrial design are extremely complex and multifaceted, involving increasingly large numbers of stakeholders. While a recent study describes a move from marketing led to design led NPD (Perks et al., 2005), there is shortcoming as to design's role in the NPD and design management literature. Jevnaker's (2005) research laid the foundations of comprehending how designers work for manufacturing firms and identified relational and activity-based capabilities embedded in the firm side. However, empirical data on how design plays a role in NPD remains limited (Kim and Kang, 2008).

Perks et al. (2005) suggest that industrial design is gravitating to the role of NPD leader. Whilst traditionally design is a final, surface-deep NPD add-on, since the 1990s design has transitioned to player in a multidisciplinary NPD process. Moreover, a handful of companies, the authors suggest, are becoming led by design from the outset of NPD. This research, therefore, seeks to better contextualise the developing approach. To understand the nature and level of changing design and designer involvement in NPD, the research focuses on the design side involvement.

NPD in mature product categories

Processes of NPD differ depending on the type of product category being created (Trott, 2001; Veryzer, 2005). Classifications of product categories have been

offered by, for example, Ansoff, 1965; Booz et al., 1982; Hart and Baker, 1999; Johne, 1995; and Trott, 2005. Just one grade of Booz, Allen and Hamilton's (1982) classification of six types of product development – new to the world products – involves radical innovation. Trott (2001) notes that only ten percent of all products can be considered 'discontinuous' and technologically innovative. Hence, the majority of product development that takes place is not 'new', but falls into continuous, mature classifications.

The development of continuous products requires the revision of existing products, or replication of an existing technology (Veryzer 1998). Unlike the high levels of risk in discontinuous NPD, continuous NPD is the result of incremental progression, and gradual accrual of market research and intelligence. Development of these products is less reliant on frame-breaking technological innovation and scientific know-how, and more so on marketing and design, and the interactions between these disciplines. Thus, this research focuses on the role of design and designers' involvement in NPD in mature, continuous product categories, rather than in discontinuous ones.

Consultancy design and NPD

When it comes to the role of design in NPD, such design activity can be carried out in-house, or it can be outsourced, or a combination of both (Bruce and Morris, 1995). The choice of approach has been suggested to affect courses of NPD and product success. The outsourced approach is, however, generally considered to be more dynamic: consultants external to the firm have the ability to continually input fresh ideas (Bruce and Morris, 1998a; Lorenz, 1990; Walsh et al., 1992). Analysis of external consultancy design offers the potential to isolate the dynamic richness of interplay between the design and marketing functions.

Evidence from the literature suggests a spectrum of types of consultancy-client exchanges (Bruce and Docherty, 1993). Bruce and Morris (1998b) distinguish types of client-designer relationships based on duration and proximity variables. Firm focus can determine the use of one-off exchanges with a range of suppliers, or the construction of a more enduring partnership with one consultancy. Issues of trust hence affect the client-designer relationship. That long-term relationships evolve on a 'learning by doing' basis (Jevnaker, 1998) means that long-lived exchanges can become a competitive advantage (Bruce and Morris, 1998a).

This research, in focusing on consultancy designer involvement in NPD, gives the potential to look at a range of design situations, and design-client interactions, and renders it a rich and valid context in which to explore the role of design and designers in NPD. Jevnaker's (2005) influential research, cited earlier, of the design-business relationship, studied companies using consultancy design. This

research therefore focuses on the involvement of consultancy designers in NPD in mature product categories.

METHODOLOGY

That empirical evidence on this phenomenon is limited has implications for the research methodology. Since extant research is thin, an interpretivist, discovery-driven approach was necessary (Brannick and Roche, 1997) to be able to address the research issue (Easterby-Smith et al., 2002). The interpretivist paradigm, it is suggested, is more applicable to the discovery-driven research aims of the study in hand: its focus lies in being to understand what is happening in a given context (Carson et al., 2001). As such, a case study, with its naturalistic setting, quasi-ethnographic stance, and ability to offer contextual richness (Yin, 2003), was considered the best methodological approach for this exploratory research: the case approach enables an evolutionary development over time (Carson et al., 2001). It also holds the capacity to build theory (Eisenhardt, 1989), and therefore to enhance research contribution. The collection of context-rich, empirical evidence can assist in improving design practice (Tzortzopoulos et al., 2006).

An industrial design consultancy, Design Partners, was selected as the central research site. The consultancy was known to be in an interesting time of transition as it sought to reorient itself in the challenging economic climate of the post-Celtic Tiger. Established over 25 years, and employing 30 design professionals, the consultancy is the largest of its type in Ireland. It has prototyping and workshop facilities on-site, as well as office and meeting space. The consultancy works with a range of well-known international clients in consumer products, including Palm, Terraillon and Logitech. Designers often travel internationally to meet with clients, prospective and existing, as well as to suppliers and manufacturing facilities.

The lead researcher spent six weeks embedded in the firm in summer 2009, carrying out quasi-ethnographic observation and semi-structured interviews with designers and management. A rich qualitative dataset was collected from the case notes and diary kept by the researcher. It is based on quasi-ethnographic observation, informal conversations, and attendance at company and client meetings. Eleven formal interviews with staff were recorded and transcribed. Interview topics were accounts of participation in recently completed projects, liaison with clients and colleagues, and changes in job description. The firm was found to be in an interesting period of transition, between marketing led and design led. A studio in this position has yet to be empirically examined in the literature.

FINDINGS

The empirical research has revealed that design's involvement in, and its ownership of, NPD is increasing. This corroborates the findings of Perks et al.

(2005). This increase poses issues for the management of designers and design functions. In order to unravel this theme, three key findings emerge: (i) the broadening of the designer's remit; (ii) the extent and timing of designer involvement in NPD, and (iii) the shift from an often passive and late role in NPD to one of fuller leadership and responsibility. These themes highlight the division from being marketing led to design led, and from the designer as a mere service provider, to being an authoritative consultant in the design process.

Broadening designer remit

As NPD project complexity intensified, so did the remit of the consultant designers. While minor NPD 'tweaks' posed simplistic tasks in response to client requests, designers were exercising more authority and taking the initiative to plan and suggest new opportunities for clients.

It was clear that designers' input was more complex than simply providing the surface details for predefined products. Designers reported conceiving the rationale behind the product, as well as its tangible form: they identified the market opportunities and tailored product concepts in response. As such, the design process became distinctly non-linear – the more complex the project, the greater the scope and deviation in the designer's role.

Designers shaped concepts around their commercial contextual scenarios by observing the market, and synthesising opportunities from this type of research. As such, they were keen to dissociate themselves from simply "drawing pretty pictures" (D2:7) [refers to transcript coding], instead comparing themselves to 'sponges' soaking up insight to bring about relevant products. Less time was spent physically sculpting form, and more on organisational, analytical and strategic tasks.

The creation of relevant products was paramount, and this served to satisfy the client quest for reliability. The emphasis was on attaching design concepts to a deep and insightful marketing 'story'. A senior designer referred to the 'emotion', the 'spirit' and the bigger 'story' around the product, which he linked to a holistic marketing 'vision':

> "we're being asked to bring more to the table than just the form of the product. We're being asked for the emotion and the spirit and the big story, and the strategy to link much more with marketing so that the vision that marketing have for a product that doesn't exist yet is embodied when the designer starts to make the product tangible, and that story is together with designer, marketing. That story is maintained and when it arrives on the shelf, that story is still there, hopefully" (D6:11)

Many designers described discomfort in presenting and defending 'just' a sketch. The stories and research provided the means by which their work became palatable for the client's quest for reliability. By analysing why the client should take a particular path, rather than simply describing an idea or sketch, the designers derived greater work-value. This corroborates studies on the designerly mindset (e.g. Barron and Harrington, 1981; Lauche, 2005; Michlewski, 2005). By taking the onus from the client, designers passionate about their work were able to validate their decisions. One senior designer revealed a discomfort by simply following the client's lead:

> "I feel uncomfortable if I'm just being fed insights by the client – it feels as if they're kind of doing my job for me" (D4:7)

In creating this 3-dimensional marketing vision, designers engaged in their own brand of research. This included the tapping of virtual and non-virtual sources, trend spotting, travelling and attending trade conferences. For the designers, the job continued well past office hours: indeed, many reported never completely 'turning off' from their work.

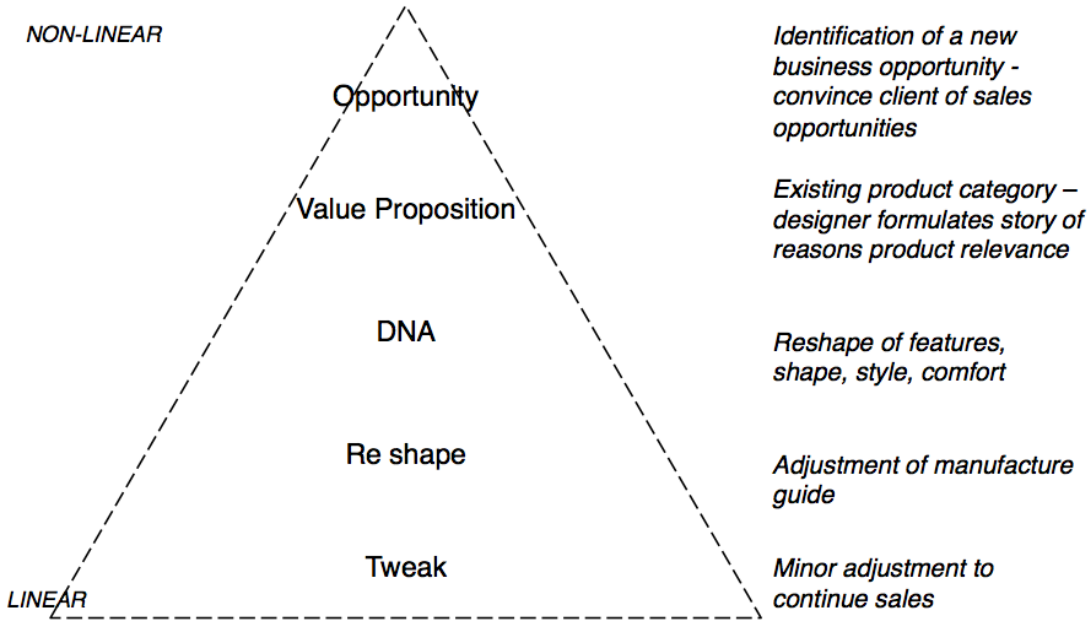
In essence, the change towards an enlarged scope of remit was marked by a move away from responding directly to client requests, to one of greater initiative and the providing of increased insight. This immediately made the design process more complex. The designer's goal was to tactically propel the client's product strategy. In this approach, as responsibility veers sharply from descriptive to analytical, from functional to strategic, from tangible to intangible: the remit becomes quasi-marketing.

Greater scope of involvement

There have been many classifications of NPD proposed in the literature (e.g. Ansoff, 1965; Booz et al., 1982; Hart and Baker, 1999; Johne, 1995; Trott, 2005). However, the role that design plays in each classification is unclear. The model proposed in Figure 1, based on our empirical study with consultancy designers working in predominantly mature product categories, suggests a broadened designer role, greater in scope and deviation, as NPD becomes more complex. These types of project are less frequent: they are found the peak of an NPD hierarchy. Indeed, Trott (2005) suggests that the majority of NPD is, in fact, variations on OPD (old product development). At the base of the pyramid, the model hence suggests a banal and simplistic design involvement at the more generic, and most common of NPD projects. However, the research also suggests a eagerness on behalf of the consultant designer to embrace and take ownership of NPD, and to instil design led influence to varying degrees. Hence, the degree on design input depends not just on the NPD project, but on his or her proactivity to

embrace the principles of being design led. This proposition will now be discussed in greater depth.

Figure 1: Types of NPD and the designer's respective input



Source: the researchers

Extensive and early NPD involvement

Designers at the case study site were undertaking a broad range of activities to assume leadership of the NPD process. They were leading clients rather than simply following instructions.

In their interface with clients, designers were found to be extremely tactical. They were extremely selective about what was presented at concept presentation stage: this approach aimed to tactically guide client decisions. To that end, design teams were small and integrated, managed by a lead (senior) designer. Concepts followed a holistic vision, and normally no more than six ideas were presented. By being tightly selective, only concepts which designers felt were entirely 'correct' could be selected by the client. In manoeuvring him or herself into a position of insightful, and in depth involvement in NPD, the designer's input is valid, important and valuable. This marks the designer's authority in client product strategy, as he becomes consultant rather than service provider.

Designers described a responsibility to guide the client, and to prevent wrong decisions being made. A junior designer explained that selectivity in what was,

and was not, presented was critical in guiding the client to make the right decision for the brand, rather than for superficial, personal, or irrational reasons:

> "sometimes the client isn't the target market, and he might like one, and he might pick one which is the wrong direction, so there is responsibility on us to help them do that" (D2:7)

Ironically, the designer appears to consider himself superior to the client in his knowledge of the client brand. This perhaps stemmed from the detached viewpoint as a consultant, however the enduring, close ties with the client were almost familial (Bruce and Docherty, 1993), and also allowed closeness, even symbiosis, to develop. While beneficial for both sides, there were also negative repercussions of this proximity.

Influence of relationship asymmetry

Close relationships had the potential to blur the boundaries between designer and client. This was evident in two key realms. Firstly, on the part of the consultancy, there was the tendency to act, and be treated as, as an in house resource rather than as an external consultancy. During the working day, designers were constantly on an IM (instant messenger) service accessible to clients, as well as by telephone. Conference calls were frequent, and local clients could call in to the studio to check progress. Trips abroad were regular, and were often used to strengthen bonds.

This constant communication was, however, not wholly welcome. A senior manager divulged that ease and intensity of communication is a double-edged sword for the profession. A senior manager connected the incessant contact and updating of clients via email to the generation extra work:

> "email is something that, it becomes a real habit. And you almost generate work, just because you're emailing – you can contact people day to day to day to day" (D9:13)

Secondly, in pragmatic terms, there was an important asymmetry in relationship: the type of work initially contracted was ambiguous, which posed issues for the financial running of the business. For instance, added to the constant availability, the consultancy regularly undertook extra work for the same fee, agreed to unfeasible deadlines.

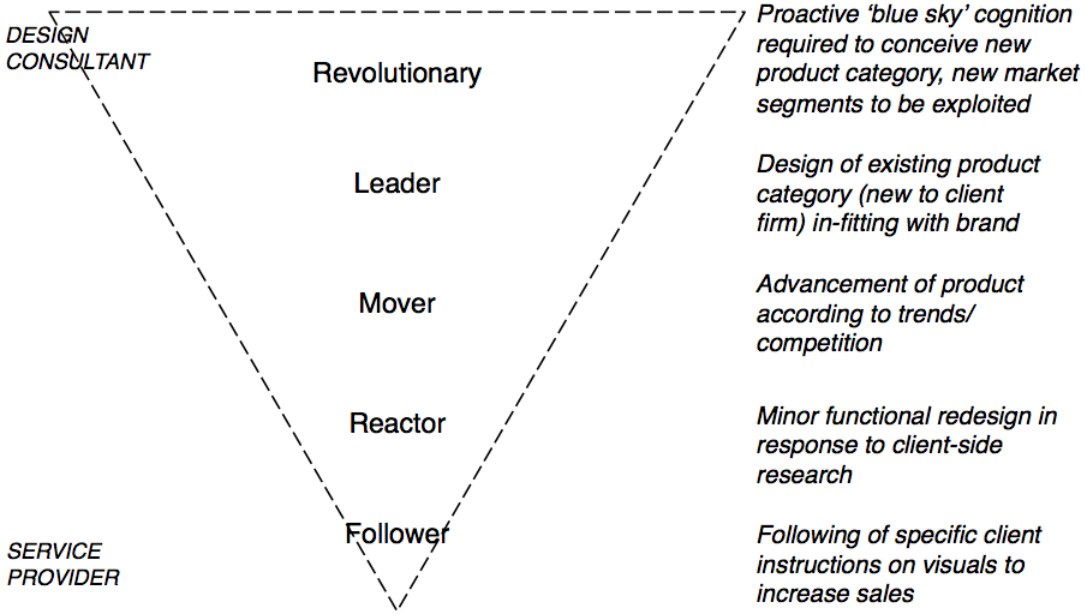
Naturally, the NPD process was affected by these relationships – some designers considered that the blurred boundaries produced the best design results. However this relationship asymmetry prevented greater self-assertion on the part of the consultancy design team, and was often a source of internal tension.

Designer as NPD leader

The tension associated with the gap between the designer as authority figure in NPD, versus the designer as fulfiller of mere service providing duties has been a key trope in the findings of this research. It emerged that an earlier, more extensive, and more complex NPD involvement heralds the designer's move towards consultant status, as NPD commander. This was, however, mediated by the relationship between designer and client.

The model in Figure 2 seeks to build on Figure 1 by describing the variation and configuration of the role fulfilled by designers. In taking a greater leadership role, where leading of the client was at its most intense, designers undertake a prominent, insightful, and important 'revolutionary' position in NPD. Hence the extent and timing of involvement is at its most intense and earliest. In contrast, where designer involvement is at its weakest, at the narrowest level of the hierarchy proposed in Figure 2, designers fulfil merely a superficial add-on role in the NPD process. In this case, they are 'followers' of the instructions of the client, operating as a service provider commanding little sway or respect.

Figure 2: Taxonomy of designer's role by type of NPD



Source: the researchers

Gravitating towards greater designer 'ownership' of NPD process

Leadership emerged as ultimately hanging upon taking charge of project and client. At the research site, this was manifested in a number of ways. Briefing was one

such area in which the designer took responsibility to lead the client. It was not uncommon that briefs were informal or non-existent. Hence design was involved from the outset: designers wrote their own briefs, which were later vetted and signed off by the client.

Such was the intimacy, understanding, even symbiosis, between consultant designer and client brand that designers regularly took it upon themselves to guide clients as to the correct brand direction. Designers were actively involved in creating the brand: visually and strategically. For example, a senior designer was drafted into the client side team to create style 'directories' for the client's product language, colour and brand visions. These documents were shared with other consultancies hired by the client: in this case, the consultancy was guiding not only its client to create its brand, but it was also assisting and directing its client's wider network.

Leadership through brand was a recurrent theme. Indeed, the consultancy's motto, revealed during the case study period, is "to manifest our clients' brand through great product design". That the motto of a design company, run entirely by designers, embraced the terminology of marketing is revelatory. In this, the consultancy had shifted entirely from the creation of tangible form, to the creation of intangible brands. Ironically, it was by embracing the art of business, and the craft of the marketer, that the design consultancy was enabling a more 'design led' approach. Its goal hence became the strategic strengthening of its clients' propositions by reinforcing their brands. The vision for the consultancy, according to the managing director, lies firmly in bridging the two poles of the marketing versus design dilemma:

> "we understand much more clearly than we would have done 10 years ago that manifesting products, a company's brand proposition in a product form, that the product would reflect the brand and would communicate it, was much more important to the company, and much more important to our brief" (D11:8)

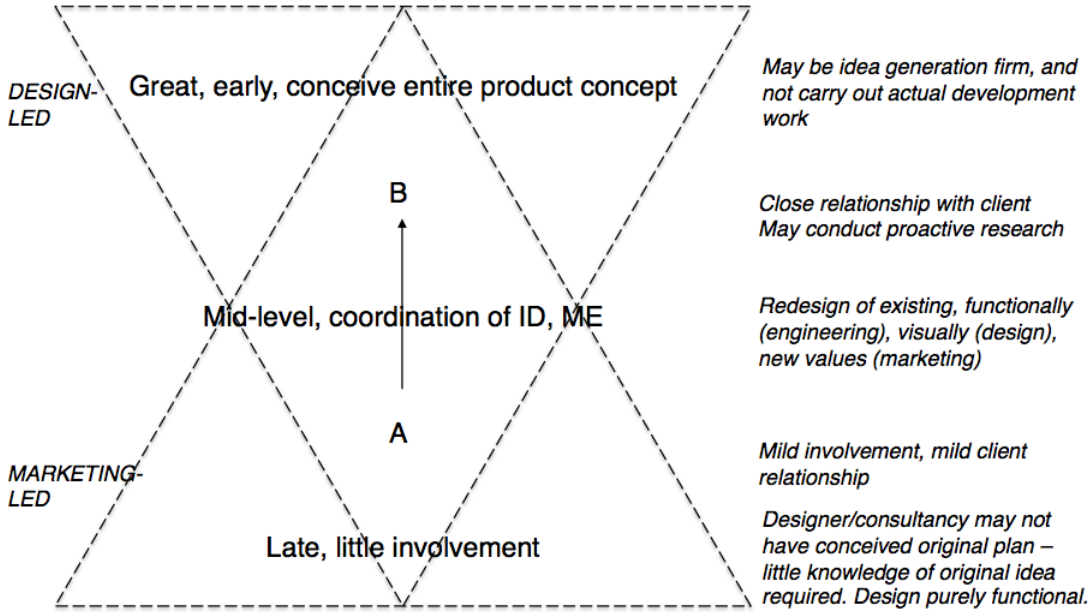
<u>Moving from marketing led following to design led ownership</u>

The previous models (Figures 1 and 2) have shown that: (i) the scope of designers' remit is broadening, which complicates processes of NPD, and (ii) as design becomes involved to a greater extent earlier in NPD, its responsibility and empowerment increases in tandem, mediated by the constellation of the designer-client relationship. These drive to support the proposition that designers are assuming greater NPD ownership. By visually combining those two tropes, the model in Figure 3 seeks to describe a range of design ownership situations.

The consultancy was moving from marketing led to design led, marked in positions 'A' and 'B' (Figure 3). As designers engaged in analytical and conceptual quasi-marketing tasks, they seized significantly greater freedom, control and ownership of NPD. Paradoxically, blurred boundaries and close collaborations meant greater leadership and responsibility. This marks the move from service provider to design authority.

Ironically, by becoming more marketing led, as the designers' embraced of the language and craft of the marketer, the consultancy was in the position to propel its clients' NPD strategy. In essence, as design's NPD influence becomes more intense, project and client become more design led.

Figure 3: Taxonomy of designer NPD ownership



Source: the researchers

CONCLUSIONS

This research seeks to examine the growing involvement of consultancy designers in NPD by analysing the structure and components of a novel design led approach. In an era when design, its uses, its tools and its organisation are taking on an increasing complexity, there is emerging evidence of design embracing a greater leadership role in NPD. Three important areas mediating designer NPD ownership emerged in this study.

First, the researchers found evidence that the designer fulfils a role greater than simply the providing of surface form to pre-defined products. Rather, the designer's remit was evolving and broadening to be able to identify and suggest opportunities

for clients. Designers were marketing savvy and took the initiative to propose and research marketable concepts.

Second, designers were involved earlier and to a greater extent in NPD. By taking greater control of the process, designers themselves were evolving from service providers to design consultants. The level of authority exercised was, however, mediated by the constellation of the client-designer relationship, which brought pitfalls as well as benefits.
Third, it is suggested that design is assuming a greater ownership of the NPD process. Ironically, by adopting and embracing the language and craft of the marketer, the designer is able to become more design led.

These three insights find a concluding expression in Figure 3 'Taxonomy of designer NPD ownership'. Building on the research by Perks et al. (2005), the model charts the shift as design gravitates towards greater leadership and responsibility in NPD. Such is the scope of change in the designer's involvement in NPD, competencies have to evolve in line: fluency in communication and management skills are becoming a necessary complement to traditional design training. With its range of complex, intricate and deviant designer roles, the model crystallises this troublesome and multidimensional, yet potentially fertile, transitional phase in the industrial design discipline. As the profession evolves, as designers increasingly sell a greater range of expertise and provide greater value to clients, it is suggested that the model provides relevant insight to both design consultancies and client firms in the NPD process.

The seemingly contradictory opposites in the designer's remit – design versus marketing; synthesis versus analysis; doing versus thinking; leading versus following – indicated the challenges to the discipline in its state of flux. While paradox is often interpreted as imposing a simple 'either-or' choice between polar opposites, a more inclusive notion posits that, in a 'both-and' approach, we can acknowledge and better cope with the ambiguous, complex and diverse nature of business and organisations (O'Driscoll, 2008). For design, with its multitude of facets and new challenges, this is a valuable proposition. The early embracing of the language and craft of marketing has enabled designers to reorient themselves into a more powerful and increasingly knowledgeable position, and in doing so, they have assumed a degree of ownership and responsibility outside of the traditional sphere of influence.

However, to fully utilise the potential of this transition, to assume greater credibility and recognition in business and NPD – for example, design representation at board level – these tensions need to be fully addressed, managed, and resolved. Where relationships are crucial, where designers are marketers, the researchers suggest an urgent and widespread need for designer (re)training to be able cope with new and increased demands. As the design-thinking literature suggests, the discipline has a

widespread applicability, and potential (Borja de Mozota, 1998; Martin, 2009), and the task now is to educate and enhance its reach. Further research – charting greater designerly contribution to NPD, comprehending how designers may have a more holistic impact upon both product strategy and product function, and exploring how design activity may be more usefully integrated into organisations – is required.

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